REMARKS

Reconsideration and allowance of this application, as amended, are respectfully requested.

Claims 1-24 are pending, with claims 3,4,9 and 12-24 being withdrawn from consideration. Applicant appreciates the Examiner's indication of allowable subject matter in claims 5 and 8.

Claim 7 stands rejected based on 35 USC §112. This claim is rewritten into independent form without adding further limitations. Hayashi fails to disclose the claimed numerical condition, thus the claim is not anticipated by Hayashi. Claim 7 includes a limitation that the unit of $\Delta\ \theta$ is degrees and thus it is requested that the §112 rejection is not proper.

Claims 1, 2, 6 and 7 stand rejected under 35 USC §102 as being anticipated by Hayashi. Claim 11 stands rejected under 35 USC §103 as being unpatentable based on Hayashi (USP 4,964,707). These grounds of rejection are traversed and the claims are amended. In applicants view, our claimed combinations are neither specifically taught nor even suggested by Hayashi.

Our Figures 12A-12B show an arrangement including a first polarizing member (3), positioned and arranged such that a distance therefrom to the position of localized fringes is variable. Our Figures 14A-14B show the second polarizing member (12), positioned and configured such that a distance therefrom to the position of localized fringes is variable.

Figure 14 of Hayashi shows only one polarizing member (13) and accordingly the polarizing member (13) cannot be located at positions different from each other. Thus, the structure of Hayashi is different from the structure defined by our amended claim 1 which includes the feature "said first polarizing member and said second polarizing member are disposed at positions different from each other in a path of rays from said illumination source to said second polarizing element". In addition, since there is only one polarizing member

(13), or the polarizing member (13) acts as the claimed first polarizing member and the claimed second polarizing member simultaneously, Hayashi cannot be configured so that "either one of said first polarizing member and said second polarizing member is configured so that a distance therefrom to said position of localized fringes is variable". As discussed above, claim 1 is not anticipated by Hayashi.

Claims 2,6, 11 and new claim 25 depend from amended claim 1 and thus should also be in allowable condition.

Claims 5 and 8, which are indicated as containing allowable subject matter by the Examiner, are rewritten into independent form.

All objections and rejections having been addressed, it is respectfully submitted that the present application is in a condition for allowance and a Notice to that effect is earnestly solicited.

Respectfully submitted,
Pillsbury Winthrop LLP

By: _____

Glenn J. Perry
Reg. No.:28458
Tel. No.: (703) 905-2161
Fax No.: (703) 905-2500

GJP\jjg
1600 Tysons Boulevard
McLean, VA 22102

(703) 905-2000
Enclosure: Appendix

APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

1. (Amended) A differential interference optical system comprising:

an illumination source;

a first polarizing element for converting a ray of light emitted from said illumination source into linearly polarized light;

a first polarizing member for separating said linearly polarized light converted by said first polarizing element into two linearly polarized components which vibrate perpendicular to each other and travel at a slight separation angle;

a lens system for illuminating and observing an object to be observed;

a second polarizing member for combining said two linearly polarized components on an identical path after passing through said lens system; and

a second polarizing element for converting a ray of light combined by said second polarizing member into linearly polarized light,

wherein said first polarizing member and said second polarizing member are disposed at positions different from each other in a path of rays from said illumination source to said second polarizing element,

wherein at least one polarizing member of said first polarizing member and said second polarizing member possesses a position of localized fringes at which said two linearly polarized components intersect with each other, and

wherein either one of said first polarizing member and said second polarizing member is configured so that a distance [from said at least one polarizing member] therefrom to said position of localized fringes is variable.

2. (Amended) A differential interference optical system according to claim 1, wherein an angle made by a normal [of] to a surface of said at least one polarizing member with an optical axis of said differential interference optical system is changed and thereby said distance from said at least one polarizing member to said position of localized fringes can be changed.

5. (Amended) A differential interference optical system [according to claim 2,] comprising:

an illumination source;

a first polarizing element for converting a ray of light emitted from said illumination source into linearly polarized light;

a first polarizing member for separating said linearly polarized light converted by said first polarizing element into two linearly polarized components which vibrate perpendicular to each other and travel at a slight separation angle;

a lens system for illuminating and observing an object to be observed;

a second polarizing member for combining said two linearly polarized components on an identical path after passing through said lens system; and

a second polarizing element for converting a ray of light combined by said second polarizing member into linearly polarized light,

wherein at least one polarizing member of said first polarizing member and said second polarizing member possesses a position of localized fringes at which said two linearly polarized components intersect with each other, and a distance from said at least one polarizing member to said position of localized fringes is variable,

wherein an angle made by a normal to a surface of said at least one polarizing member with an optical axis of said differential interference optical system is changed and thereby

said distance from said at least one polarizing member to said position of localized fringes can be changed, and

wherein an angle made by said normal [of] to said surface of said at least one polarizing member with said optical axis of said differential interference optical system is changed, and said at least one polarizing member is moved in a direction perpendicular to said optical axis of said differential interference optical system.

7. (Amended) A differential interference optical system [according to claim 6,] comprising:

an illumination source;

a first polarizing element for converting a ray of light emitted from said illumination source into linearly polarized light;

a first polarizing member for separating said linearly polarized light converted by said first polarizing element into two linearly polarized components which vibrate perpendicular to each other and travel at a slight separation angle;

a lens system for illuminating and observing an object to be observed;

a second polarizing member for combining said two linearly polarized components on an identical path after passing through said lens system; and

a second polarizing element for converting a ray of light combined by said second polarizing member into linearly polarized light,

wherein at least one polarizing member of said first polarizing member and said second polarizing member possesses a position of localized fringes at which said two linearly polarized components intersect with each other, and a distance from said at least one polarizing member to said position of localized fringes is variable,

wherein an angle made by a normal to a surface of said at least one polarizing member with an optical axis of said differential interference optical system is changed and thereby

said distance from said at least one polarizing member to said position of localized fringes can be changed,

wherein said first polarizing member or said second polarizing member is a Wollaston prism or a Nomarski prism, and

wherein one of said Wollaston prism and said Nomarski prism is constructed to satisfy the following condition:

$$|\Delta\ \theta| \times d < 12$$

where d is a thickness of said prism, in millimeters, and $\Delta\ \theta$ is a variation of an angle made by a normal [of] to a surface of said prism with said optical axis of said differential interference optical system, in degrees.

8. (Amended) A differential interference optical system [according to claim 1,] comprising:

an illumination source;

a first polarizing element for converting a ray of light emitted from said illumination source into linearly polarized light;

a first polarizing member for separating said linearly polarized light converted by said first polarizing element into two linearly polarized components which vibrate perpendicular to each other and travel at a slight separation angle;

a lens system for illuminating and observing an object to be observed;

a second polarizing member for combining said two linearly polarized components on an identical path after passing through said lens system; and

a second polarizing element for converting a ray of light combined by said second polarizing member into linearly polarized light,

wherein at least one polarizing member of said first polarizing member and said second polarizing member possesses a position of localized fringes at which said two linearly

polarized components intersect with each other, and a distance from said at least one polarizing member to said position of localized fringes is variable, and

wherein one of said first polarizing member and said second polarizing member includes only a first birefringent element with a property of birefringence, separating an incident ray of light into two linearly polarized components vibrating perpendicular to each other and traveling at a slight separation angle, or a combination of said first birefringent element with a second birefringent element which separates an incident ray of light into two linearly polarized components vibrating perpendicular to each other so that said two linearly polarized components emerge in parallel therefrom.

End of Appendix